

LISTING OF CURRENTLY PENDING CLAIMS (no amendments being made)

1. (previously amended) A method for preventing the formation of watermark defects in a semiconductor process, the method comprising:

patterning a silicon oxynitride layer; then  
etching a trench in a semiconductor substrate  
through the patterned silicon oxynitride layer; then  
conditioning the patterned silicon oxynitride  
layer, wherein no wet clean step is performed between  
the etching of the trench and the conditioning of the  
patterned silicon oxynitride layer; and then

performing a wet clean step in the presence of the  
conditioned silicon oxynitride layer, wherein the wet  
clean step cleans the trench in the semiconductor  
substrate.

2. (original) The method of Claim 1, wherein the conditioning step comprises densifying the patterned silicon oxynitride layer.

3. (original) The method of Claim 1, wherein the conditioning step comprises a rapid thermal anneal in the presence of oxygen.

4. (original) The method of Claim 3, wherein the rapid thermal anneal is performed for about 20 seconds at a temperature of about 900°C.

Claims 5-10 previously withdrawn.

11. (original) The method of Claim 1, further comprising:

forming a pad oxide layer over a semiconductor substrate;

forming a silicon nitride layer over the pad oxide layer; and

forming the silicon oxynitride layer over the silicon nitride layer.

12. (original) The method of Claim 11, further comprising:

forming a photoresist layer over the silicon oxynitride layer; and

exposing the photoresist layer through a reticle, wherein the silicon oxynitride layer operates as an anti-reflective coating during the exposure;

developing the exposed photoresist layer, thereby forming a photoresist mask having an opening.

13. (previously amended) The method of Claim 12, further comprising etching the silicon oxynitride layer, the silicon nitride layer, the pad oxide and the semiconductor substrate through the photoresist mask, thereby forming the trench in the semiconductor substrate.

14. (original) The method of Claim 13, further comprising:

stripping the photoresist mask; and then performing the conditioning step.

15. (original) The method of Claim 14, further comprising thermally growing a liner oxide layer in the trench after performing the wet clean step.

16. (original) The method of Claim 15, further comprising depositing an insulating material over the liner oxide layer.

17. (original) The method of Claim 16, further comprising performing a chemical-mechanical polishing (CMP) step to remove portions of the insulating material, the conditioned silicon oxynitride layer, and portions of the silicon nitride layer.

18. (original) The method of Claim 1, further comprising using hydrogen fluoride (HF) in the wet clean step.

19. (original) The method of Claim 1, wherein the wet clean step comprises a buffered oxide etch (BOE).